QUARTERLY REPORT ON THE EURO AREA

Volume 6 N° 1 (2007)

Highlights in this issue:

- Recent economic developments and short-term prospects
- Is the yield curve still predicting recessions?
- The Lisbon Agenda for the euro area: the 2007 update of the Integrated Guidelines
- Focus: The contribution of labour cost developments to price stability and competitiveness adjustment in the euro area
- Focus: The reduced volatility of output growth in the euro area

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR ECONOMIC AND FINANCIAL AFFAIRS

ISSN 1830-6403

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EDITORIAL

In 2006 the economic situation brightened substantially. GDP grew by 2.6% last year, up from 1.4% in the year before. This is the best performance since 2000 and clearly above potential growth which means that the output gap has improved significantly. In the last quarter of 2006, growth was balanced, driven by both domestic and external demand. Reflecting the positive growth momentum, the unemployment rate continued to edge down, falling to 7.4% in January 2007, the lowest level since 1993.

Business and consumer confidence remain at very high levels and forecasts for this year are positive. According to the Commission's interim forecasts, the euro-area economy should continue to grow robustly at 2.4% over 2007. But in the longer run, prospects could diminish due to some looming risks in the external environment. These include more sluggish growth in the USA, unfavourable exchange rate developments, potentially high and volatile oil prices and a disorderly unwinding of global imbalances. Moreover, the recent equity market turbulence is indicative of heightened financial market uncertainties. It is too early to tell whether this reflects a mere technical correction or the beginning of a more sustained period of weakness.

Euro-area Member States have not sat still during the past few years. Since the launch of the Lisbon strategy, more progress has been made with structural reform than is generally thought. In most euro-area countries the average tax wedge on labour has fallen and many countries have taken measures in the field of benefit systems in order to 'make work pay.' Eight euro-area countries introduced reforms to their public pension systems and many countries tightened early-retirement schemes. Many product markets have become considerably more competitive over the last five years, due inter alia to the liberalisation of network industries, the effects of competition policy and measures to make public interventions more efficient. Finally, a host of initiatives have been launched to foster research and the diffusion of new technologies.

As a result, the euro area has clearly regained strength. Part of the recent fall in the unemployment rate is cyclical in nature, but according to econometric estimates the structural rate of unemployment has come down as well. This is mirrored by the euro-area's employment growth, which accelerated to 1.4% in 2006 and yielded an increase of close to 2 million new jobs. Since the introduction of the euro more than 12 million jobs have been created in the euro area, more than in the US over the same period. These positive developments suggest that earlier labour market reforms are bearing fruit. Moreover, pension reforms coupled with changes to early retirement rules have already increased significantly the employment rate of older workers and have raised the effective retirement age by one year. Finally, there is a rebound in labour productivity growth and several factors suggest that this could be more than just a cyclical rebound. These are all tangible indications that the structural reforms undertaken in the last few years have started to pay off.

But it is important that we take advantage of favourable cyclical conditions to make further progress with structural reforms. These reforms are essential for all EU countries in order to raise their growth and job potential. But there is an extra dimension for euro-area countries. The single monetary policy has clearly contributed to macroeconomic stability in the euro area, but also requires the participating countries to adjust to country-specific economic shocks and competitiveness pressures without the help of national interest or exchange rate policies. This process does not yet function optimally, as is illustrated by the persistence of growth and inflation differences within the euro area and of current account imbalances in some Member States. It is true that the euro-area Member States' business cycles have become more aligned since the 1990s, reflecting inter alia increasing trade and financial integration, a common monetary policy and better fiscal policy. However, although growth differences have become somewhat smaller in 2006, they remain entrenched, indicating that the

adjustment to asymmetric shocks is slow and must be improved.

Against this background, it is important that Member States make further progress with reforms that increase the adjustment capacity of the euro area.

Firstly, it is important that Member States make full use of the favourable cyclical situation to speed up budgetary consolidation. It is only when countries have accomplished their medium-term objectives that they can weather any future cyclical downswing without exceeding the 3% reference value.

Secondly, improving the quality of public finances by reviewing public expenditures and taxation, with a view to enhancing productivity and innovation, can contribute to economic growth and fiscal sustainability.

Thirdly, more competition, especially in services, and integration and competition in financial retail services would improve the euro-area's adjustment capacity. Prices still adjust too slowly to changes in national cyclical conditions. In the services sector, prices are particularly rigid, not least because of a low level of competition. Greater financial integration would further smooth the impact of economic shocks on incomes and national credit markets.

Fourthly and finally, improving flexibility and security on labour markets could support the adjustment process, inter alia by better aligning wage and productivity developments, better balancing employment protection and security in the market and enacting measures to promote labour mobility across borders and between occupations.

Accordingly, these issues form the four recommendations addressed to the euro-area Member States in the 2007 update of the Integrated Guidelines, which was endorsed by the European Council during its meeting on 8 and 9 March. This Quarterly Report explains the rationale behind the four policy recommendations.

Klaus REGLING
DIRECTOR GENERAL

I. Economic situation in the euro area

The latest reading of the national accounts for the euro area shows that the strong GDP growth in the fourth quarter rounded off the remarkable growth performance for 2006. For the year as a whole, GDP grew by 2.6%, up from 1.4% in the year before. This was the best performance since 2000 and clearly above potential growth. As a result, the economy has registered its first significant improvement in the output gap since the beginning of the decade. In the last quarter of 2006, growth was balanced, driven by both domestic and external demand. Business and consumer confidence remain at a very high levels. Some easing is foreseen in the manufacturing sector in the coming months but growth will continue to be supported by strong momentum in the services sector. According to the Commission Services' February Interim Forecast, GDP growth should continue at a robust pace of about 2½% in 2007.

An inverted yield curve in the US and an almost flat curve in the euro area have drawn attention to the historical relationship between the yield curve and economic growth. In particular for the US, an inversion of the yield curve has been a "safe bet" predictor of an upcoming recession. This traditional relationship has now come into question, in both the US and the euro area. The main reasons for a possible structural break of the relationship are the exceptionally low level of bond yields, excess liquidity, the high credibility of monetary policy and the still low levels of policy interest rates compared to long-term or neutral levels. It may even be that a flat yield curve could be stimulating economic growth under the current circumstances of tightening monetary policy.

The last part of this chapter presents an economic analysis of the four policy recommendations addressed to the euro area as part of the 2007 Integrated Guidelines, which were endorsed by the European Council of 8 and 9 March. These recommendations include: (i) strengthening budgetary consolidation in good times; (ii) enhancing the quality of public finances; (iii) fostering competition, especially in services and; (iv) improving flexibility and security on labour markets.

1. Recent economic developments and short-term prospects[1]

Strong growth in the last quarter of 2006

The economic situation in the euro area brightened substantially in 2006. After a slight deceleration in the third quarter of 2006 (0.6%), euro-area GDP accelerated to a very healthy 0.9% q-o-q in the last quarter, a significantly better outturn than projected in the Commission services' Autumn 2006 Forecasts (0.6%). At the same time, real GDP growth in the third quarter was revised upwards to 0.6%. For the year as a whole, GDP grew by 2.6%, up from 1.4% the year before. This was the best performance since 2000 and clearly above potential growth. As a result, the economy registered its first significant improvement in the output gap since the beginning of the decade.

Growth in the fourth quarter was broad-based across most euro-area countries. GDP growth was very buoyant in Germany, Italy and Spain (0.9%, 1.1% and 1.2% respectively). In France, after a flat reading in the third quarter of 2006, growth rebounded to 0.6%.

Domestic demand driven by robust investment growth

As in previous quarters, domestic demand (excluding inventories) continued to fuel economic growth in the last quarter of 2006, accelerating slightly to 0.7%, compared to 0.6% in the previous quarter. It was primarily driven by a surge in investment spending. Gross fixed capital formation accelerated to a strong 1.2%, up from 0.6% in the third quarter. For the year as a whole, investment showed a robust growth momentum with a y-o-y growth of 4.5%.

The breakdown of investment spending by sector is not yet available for the last quarter of 2006. However, there is indirect evidence that growth in investment was underpinned in part by robust expansion in construction investment. Value added in the construction sector, which is generally closely linked to spending in construction, accelerated to 1.4% in the last quarter of 2006, compared to 1.1% in the previous quarter. Favourable weather conditions

[1] The cut-off date for the statistics included in this issue was 22 March 2007.

Table 1: **Euro-area growth components**

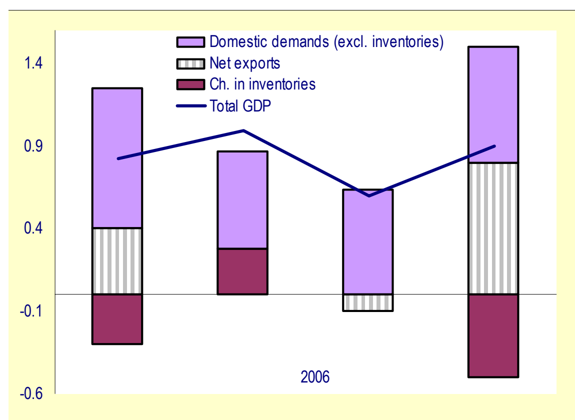
	2006 Q1	2006 Q2	2006 Q3	2006 Q4	Carryover to 2007	Forecast (1) 2006 (2)	2007 (2)
	Percentage change on previous period, volumes						
GDP	0.8	1.0	0.6	0.9	1.2	2.6	2.1
Private consumption	0.6	0.3	0.7	0.5	0.8	2.0	1.6
Government consumption	1.4	0.0	0.6	0.5	0.7	2.0	1.4
Gross fixed capital formation	0.8	2.1	0.6	1.2	1.7	4.3	3.0
Changes in inventories (% of GDP)	0.0	0.3	0.4	-0.3	-0.4	0.2	0.4
Exports of goods and services	3.1	0.9	1.8	3.7	3.9	7.9	6.0
Imports of goods and services	2.3	0.8	2.2	1.9	2.7	7.5	5.7
	Percentage point contribution to change in GDP						
Private consumption	0.3	0.2	0.4	0.3	0.5	1.1	0.9
Government consumption	0.3	0.0	0.1	0.1	0.1	0.4	0.3
Gross fixed capital formation	0.2	0.5	0.1	0.3	0.4	0.9	0.6
Changes in inventories	-0.3	0.3	0.0	-0.6	-0.4	-0.1	0.1
Net exports	0.4	0.0	-0.1	0.8	0.6	0.3	0.2

(1) Annual change in %. (2) European Commission Autumn 2006 Forecasts.

Source: Commission services.

in the last quarter of 2006 probably played a positive role. Combining data on total investment with estimates of construction spending suggests that equipment investment (which accounts for half of total investment) also grew healthily in the fourth quarter (about 1%).

Graph 1: **Contributions to real GDP growth, euro area**
(q-o-q % point contributions)

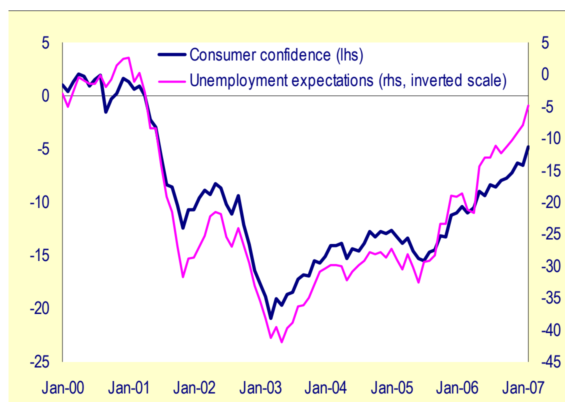


Source: Commission services.

Fourth quarter GDP data features a very strong export growth performance (+3.7% q-o-q) which seems to have taken manufacturers as well as economists by surprise. The surge in exports was met as much by a strong inventory draw-down as by additional production, particularly in Germany. This strong reduction in inventories had a clear downward effect on growth. Including changes in inventories, domestic demand increased by only 0.1%. After such a large draw-down, a strong positive contribution by the inventories can be expected in the first quarter of 2007 as manufacturers replenish their stocks.

Private consumption continued to expand at a relatively solid pace. It increased by 0.6% in the fourth quarter of 2006 and data for the third quarter was revised upwards to 0.7%.

Graph 2: **Consumer confidence, euro area**
(Balance in % – Jan 2000 to Feb 2007)



Source: Commission services.

Household spending is clearly being fostered by an improving outlook for the labour market. Employment in the euro area increased by 0.3%(quarter-on-quarter) in the third and fourth quarters of 2006. For the year as a whole,

Table 2: **Real GDP growth, euro area**
(Interim Forecast February 2007)

	Quarterly GDP forecast (%, quarter-on-quarter)				Annual GDP forecast (%, year-on-year) 2007	
	2007/1	2007/2	2007/3	2007/4	Interim forecast (February 2007)	Autumn forecast (Nov. 2006)
Germany	-0.5	0.8	0.7	0.6	1.8	1.2
Spain	0.9	1.0	0.9	0.8	3.7	3.4
France	0.5	0.6	0.5	0.5	2.2	2.3
Italy	0.3	0.3	0.3	0.3	2.0	1.4
Euro area	0.3	0.7	0.6	0.6	2.4	2.1

Source: Commission services.

employment increased by 1.4%, the highest rate since 2001.

In line with these developments, consumer confidence picked up in February, reaching high levels last observed in 2001, while households' future employment expectations are reaching levels last achieved in April 2001 (Graph 2).

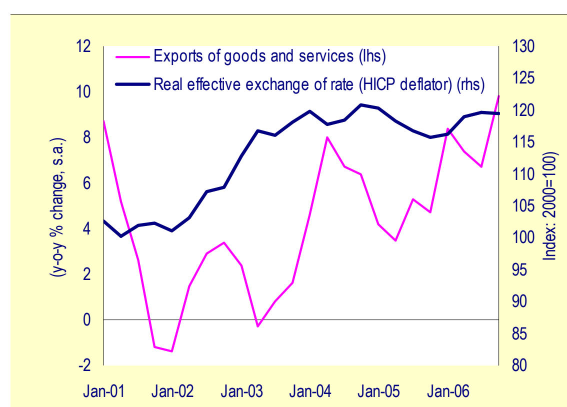
The continuous improvements in the labour market combined with a possible modest rise in wages and lower energy prices should translate into a further increase in households' purchasing power and consumption in the first quarters of 2007.

A strong contribution from net trade

Net trade, and particularly strong export growth was the main contributor to euro-area growth in the last quarter of 2006. Euro-area exports increased sharply (3.7% q-o-q) as a result of a strong increase in extra-euro-area exports. This increase in export growth was broad-based across euro-area countries. In Germany, exports grew at a spectacular rate of 6%, up from the already high 4.5% in the third quarter. At the same time, imports in the euro area rose by 1.9%, compared to 2.2% in the third quarter.

Euro-area trade clearly continued to benefit from buoyant world trade. According to the latest estimates of the CPB Netherlands Bureau of Economic Policy Analysis, world trade increased by 10.1% (q-o-q annualised) in the last quarter of 2006, marginally down from 10.7% in the third quarter. Emerging economies remained the most dynamic region. Trade developments in these countries offset the sluggish trade performances of the US and Japan.

Graph 3: **Exports and real effective exchange rate, euro area** (monthly data Jan 2001 to Oct 2006)



Source: Commission services.

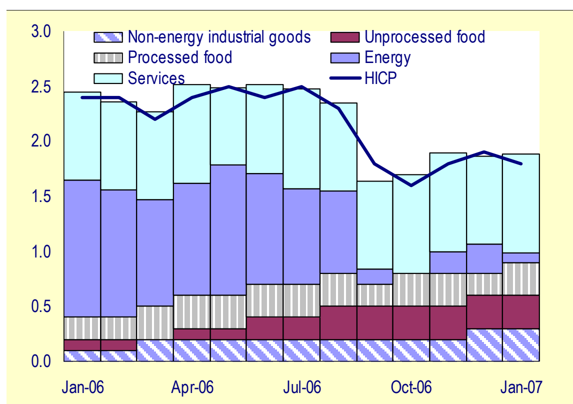
In 2007, the US economy is expected to grow at an annual rate of 2.3%, compared to 3.3% in 2006, as the slowdown in the housing market dampens consumer spending. Nevertheless, global economic growth should remain solid and world trade should keep expanding at a robust pace, though likely somewhat less rapidly than in 2006. Indeed, most recent survey indicators of the world economy continue to point to a period of strong momentum over the coming months, suggesting that the moderation of global economic activity should remain limited in the short term. The January reading of the quarterly World Economic Survey indicates an improvement of expectations for the next six months, after a couple of quarters of declining expectations. In line with this, the February Global Manufacturing PMI pointed to a recovery

in global manufacturing from the downward trend observed since mid-2006. Moreover, according to the European Commission's manufacturing survey, export prospects for euro-area manufacturers remain close to their all-time record highs.

Inflation remains moderate

According to Eurostat's latest flash estimate, euro-area HICP inflation remained stable at 1.8% year-on-year in February. These figures are below the expected inflation data for the beginning of 2007.[2] This can be attributed to the VAT hike in Germany having a weaker impact than expected and to lower than expected energy prices. Core inflation, however, rose from 1.8% to 1.9% in February due to the VAT hike.

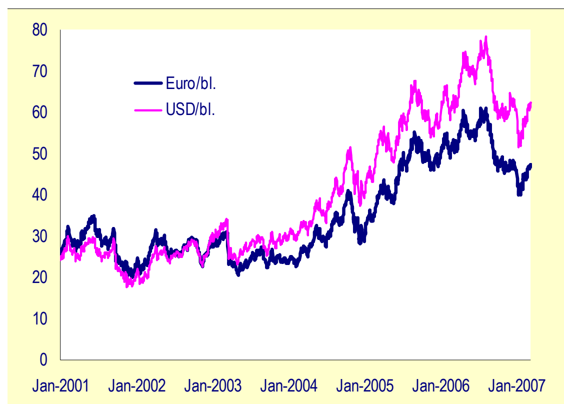
Graph 4: **Contributions to headline inflation**
(y-o-y changes in % - Jan 2006 to Jan 2007)



Source: Commission services.

Energy price, which had been an important source of price pressures during the first half of last year have lost steam. At the beginning of 2006, the direct contribution of energy inflation to headline was about 1 percentage point (Graph 4). Since September 2006, the contribution has declined substantially to reach less than 0.1 percentage points in January 2007. This developments mirror a fall in the price of the barrel of Brent from an average of USD 70 in January 2006 to USD 54.6 in January 2007 (Graph 5). In addition, the fact that core inflation remained quite stable at around 1.5% in 2006 suggests that second-round effects from past energy price hikes have been and are likely to remain limited.

Graph 5: **Oil price developments**
(1 Jan 2001 to 08 Mar 2007)



Source: Commission services.

The services sector is now the main contributor to inflation, with a persistently large contribution of 0.9 percentage point to headline inflation. Since mid-2006, due to adverse weather conditions, the contribution of unprocessed food has been increasing, partly offsetting the lower impact of energy. The two remaining categories, processed food and non-energy industrial goods, have only had a small impact on inflation developments.

Turning to price expectations, evidence from manufacturing and household surveys is consistent with benign inflation developments in the months ahead. Industrial managers expect stable price pressures in the coming months while consumers even anticipate an easing of inflation over the next year.

Despite favourable labour market developments, wage growth has so far remained moderate.[3] The various labour costs indicators show continued moderation in the third quarter of 2006 (last available data). Looking ahead, the Commission's Autumn 2006 Forecast predicts a slight acceleration of wages due to new wage agreements being implemented in selected countries. These moderate upward pressures will

[2] The European Commission's Autumn 2006 Forecast predicted HICP inflation of 2.4% in the first quarter of 2007.

[3] See the focus section on 'Contribution of labour cost developments to price stability and competitiveness adjustment in the euro area' in this issue for a detailed discussion.

Table 3: **Selected euro-area and national leading indicators, 2005-2006**

	SENT. IND1)	BCI2)	OECD3)	PMI Man.4)	PMI Ser 5)	IFO6)	NBB7)	ZEW8)
Long-term average	100.9	0.00	2.77	52.6	54.8	96.6	-7.8	27.9
Trough in latest downturn	88.1	-1.25	-0.77	42.9	46.7	87.3	-26.5	-10.4
February 2006	102.8	0.5	4.4	54.5	58.2	104.8	1.6	69.8
March 2006	103.5	0.8	4.5	56.1	58.2	105.6	0.3	63.4
April 2006	106.0	1.1	4.8	56.7	58.3	105.4	6.4	62.7
May 2006	107.0	1.0	4.8	57.0	58.7	103.9	1.4	50.0
June 2006	107.4	1.4	4.2	57.7	60.7	104.1	10.6	37.8
July 2006	108.3	1.3	3.4	57.4	57.9	102.6	5.6	15.1
August 2006	107.4	1.2	3.0	56.6	57.4	101.4	3.3	-5.6
September 2006	108.9	1.4	2.5	56.6	56.7	98.9	5.0	-22.2
October 2006	110.0	1.4	2.4	57.0	56.5	99.2	2.4	-27.4
November 2006	109.9	1.5	2.2	56.6	57.6	100.2	4.1	-28.5
December 2006	109.8	1.6	1.9	56.5	57.6	102.5	2.4	-19
January 2007	109.2	1.4		55.5	57.9	103.2	1.1	-3.6
February 2007	109.7	1.6		55.6	57.5	102.6	2.0	2.9

1) Economic sentiment indicator, DG ECFIN. 2) Business climate indicator, DG ECFIN. 3) Composite leading indicator, six monthly change. 4) Reuters Purchasing Managers Index, manufacturing. 5) Reuters Purchasing Manager Index, services. 6) Business expectations, West Germany. 7) National Bank of Belgium indicator for manufacturing. 8) Business expectations of financial market analysts, Germany.

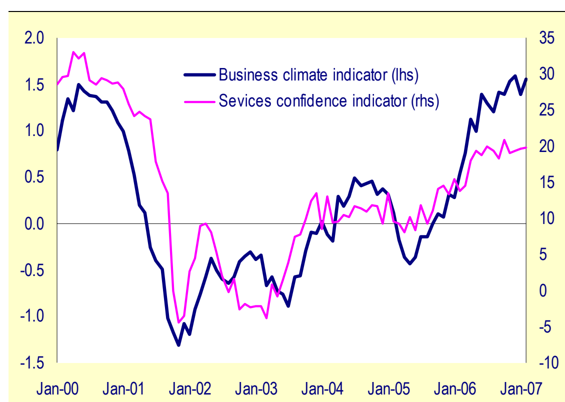
not materialise before next year, however, with wage growth increasing from 2.2% in 2007 to 2.5% in 2008. Unit labour costs remained stable at 0.8% in the third quarter of 2006, suggesting that inflationary pressures stemming from the labour market remain subdued.

Business confidence remains strong

Manufacturing confidence indicators remain remarkably high. After a decline in January, the European Commission's Business Climate Indicator for the euro area rebounded in February, reaching record highs once again (Graph 6). This was the result of a more optimistic assessment of past production trends and order books. However, managers' production expectations weakened somewhat. The Reuters PMI index for manufacturing activity slightly increased in February (from 55.5 to 55.6) after a one-point decrease in January.

While industrial production growth was nearly flat in October and November 2006, it sharply accelerated in December (1.2% m-o-m), suggesting that the underlying trend remains strong. The latest Eurostat press release shows, however, that industrial production in January decreased by 0.2%. This lower-than-expected figure should be interpreted with caution since it may reflect some seasonal-adjustment problems, and also masks large differences between Member States. Industrial production contracted strongly in Italy and the Netherlands (-1.4% and -4.3% month-on-month respectively). However, it increased strongly in Germany (1.7%) which is in line with the large contraction in inventories observed in that country in the last quarter of 2006.

Graph 6: **Business confidence indicators, euro area**
(Balance in % – Jan 2000 to Feb 2007)



Source: Commission services.

In the services sector, activity was buoyant in the last quarter of 2006, suggesting that this sector's role in the euro area's economic growth is increasing. Looking ahead, the European Commission's survey shows a stabilisation of confidence in the services sector in January and February, above its long-term average (Graph 6). Reuters Service Index displayed a small drop in February after an increase in January, but it remains well above its long-term average. With sentiment indicators continuously pointing to robust growth and with domestic demand gaining momentum, activity in the services sector should remain strong in the next few months.

By contrast, developments in the construction and retail sectors' indicators point to some loss of momentum in these sectors. In February, the confidence indicator for the construction sector recorded its third consecutive decline. While the indicator remains at a high level, it seems to have passed its peak. This is at odds with the value added in the construction sector, which accelerated to 1.4% in the last quarter of 2006, compared to 1.1% in the previous quarter. But it is in line with a probable easing of housing demand in the euro area as a result of high house prices and rising mortgage rates.

In February, the confidence indicator for the retail sector recorded its fourth consecutive and now stands significantly below its peak. The decrease in February mainly resulted from a sharp decrease in confidence among retailers in Germany. This is not surprising as retail sales in Germany dropped by 5.1% month-on-month in January after a 2.6% increase in December. The strong fall was clearly a reaction to the VAT hike. The survey seems to indicate that the retail sector has passed its peak. However, one should be cautious about drawing any conclusions on future consumption. First, the VAT hike in Germany has clearly blurred the picture in February. Second, the capacity of retail surveys to predict future consumption has proved to be quite poor.

Short-term outlook and risks

According to the Commission services' Interim Forecast released on 16 February, economic growth should continue at a robust pace, though moderating to 2.4% in 2007. This represents a 0.3 percentage point upward revision compared with the Commission services' Autumn 2006 Forecast. The revision is mostly due to the stronger-than-expected carry-over from 2006, coupled with a slightly higher growth profile for 2007. GDP growth is expected to moderate temporarily in the first quarter of 2007, mainly reflecting developments in Germany. It should then rebound to around 0.6% during the remaining quarters of the year.

Regarding prices, the forecast has been revised downwards, with HICP inflation now projected to average 1.8% in 2007, i.e. 0.3 percentage points lower than in the autumn 2006 forecast. The more optimistic outlook for inflation is mainly the result of the rather moderate impact of the German VAT hike and the expected easing of oil prices.

On the domestic side, the near-term risks to the favourable growth outlook seem to be balanced. With steady improvements in the labour market, labour income could increase more than expected, which could lead to higher-than-expected household consumption. In line with improvements in the labour market, real wage increases could go beyond productivity increases and therefore have an upward effect on prices.

Over a longer horizon, downside risks seem to prevail and to be related to the external environment. First, a sharper-than-expected US slowdown could hamper growth in the global economy. Second, due to the recent turbulence in the global equity markets, uncertainties regarding global financial markets have increased (see Box 1). In the US, there is also a risk that the observed deterioration in the sub-prime mortgage market spills over to other parts of the financial sector. Third, a further appreciation of the euro/dollar exchange rate could erode the competitiveness of euro-area exports. Fourth, oil prices could remain volatile during 2007 due to continued risks of geopolitical tensions. Finally, the disorderly unwinding of global imbalances continues to be a threat to the global growth outlook.

Box 1: **Winter storms on financial markets**

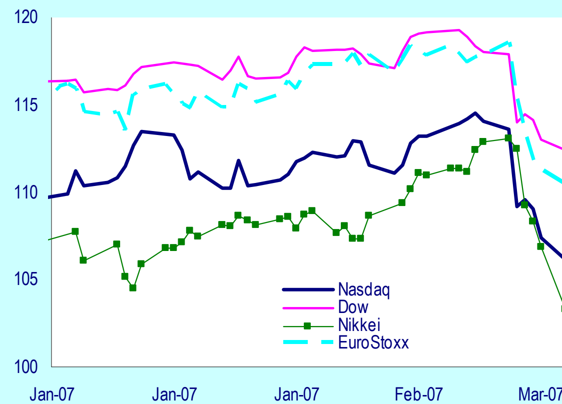
In the first two months of 2007, financial markets were characterised by a continuation of favourable trends, with buoyant stock markets and low volatility on bond and foreign exchange markets. In the last week of February, though, stock markets dropped significantly, amidst increased investor risk aversion and volatility.

Stock markets tumbled worldwide at end-February

As with the episode of market turbulence in mid-2006, the initial fall in equity prices drop was short-lived. There was evidence of a stabilisation in prices after the initial drop, followed by a second decline shortly after. Overall, equity prices are significantly lower than at the beginning of the turbulence. By 14 March, the EuroStoxx had lost more than 8% since the beginning of the turmoil on 26 February. Other major stock markets were down by between 4% (Dow Jones) and 8% (Nikkei). Since then, stock markets have slightly recovered and offset some of their losses.

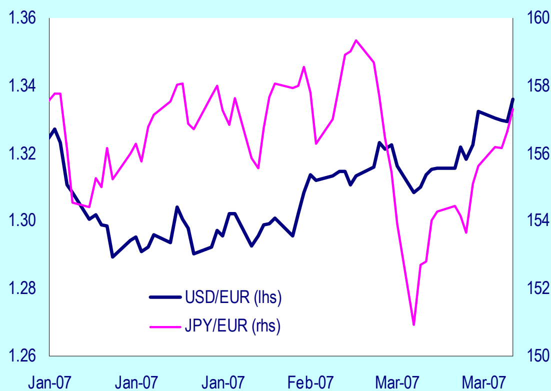
Several explanations were brought forward for triggering the market tumble. There had been a steady rise in global equity market prices in the preceding weeks, which did not seem based on economic fundamentals. The abrupt decline in equity prices in China was then triggered by investor nervousness following the authorities' establishment of a special task force to tackle illegal securities activity and media reports of a possible monetary-policy tightening. The latter development was seen as implying a prospective slowdown in the global economy. Uncertainty about the global economy was intensified by some weaker US economic data, with durable goods orders falling by more than expected and the US housing market remaining subdued with problems in the US mortgage market. Investor sentiment was undermined by reports that Alan Greenspan had spoken of a possible recession in the US economy in 2007. While none of these factors alone would have been expected to impact heavily on financial markets, their combined effect on investor confidence may have been enough to provoke the widespread market turbulence.

Stock indices
(Index 3/1/06=100, 2 Jan 07 to 22Mar 07)



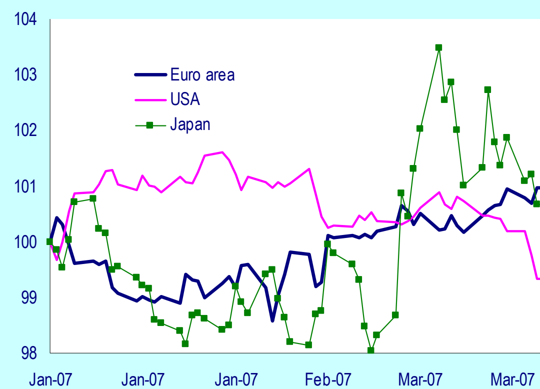
Source: Commission services.

Euro exchange rates
(2 Jan 07-22 to Mar 07)



Source: Commission services.

Nominal effective exchange rate
(Double export weights, index 1/1/07=100, 2 Jan 07 to 22 Mar 07)



Source: Commission services.

Safe haven effects drive government bond yields down

As investors fled to safety, major bond markets gained, resulting in falling yields in the US, Europe and Japan. In contrast, emerging-market debt yield spreads (as measured by the benchmark JP Morgan EMBI+ index) widened to almost 200 basis points, up from the record low 164 basis points recorded just before the outbreak of the market jitters. The spread reached 240 basis points during the market turmoil in May and June 2006.

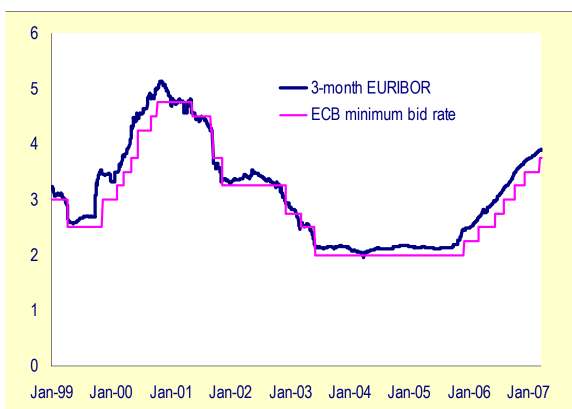
Stock market turmoil leads to unwinding of carry trade

As a consequence of the stock market turmoil, foreign exchange markets were temporarily dominated by the massive unwinding of carry trades. Between the beginning of the turmoil and its (temporary) trough, the yen gained almost 5% against the US dollar and the euro and as much as 7 to 9% against high-yield currencies such as the South African rand, the Turkish lira, the New Zealand dollar and the Brazilian real. In nominal effective terms, the yen gained some 5% until 5 March. Other low-interest currencies including the Swiss franc and the Czech koruna also appreciated, albeit to lesser extent. As stock markets stabilised in the second week of March, currency movements ebbed as well financial market participants seemed to restore carry-trade positions and the yen lost most of its earlier gains.

Monetary and financial conditions

Since December 2005, the Governing Council of the ECB has raised interest rates by a total of 175 basis points to presently 3.75%. The last rate hike was decided on 8 March 2007. The ECB decisions to hike interest rates were motivated by upside risks to price stability, identified by the Governing Council through both the economic and monetary analyses. Moreover, the interest rate hikes should anchor medium to longer-term inflation expectations in the euro area at levels consistent with price stability.

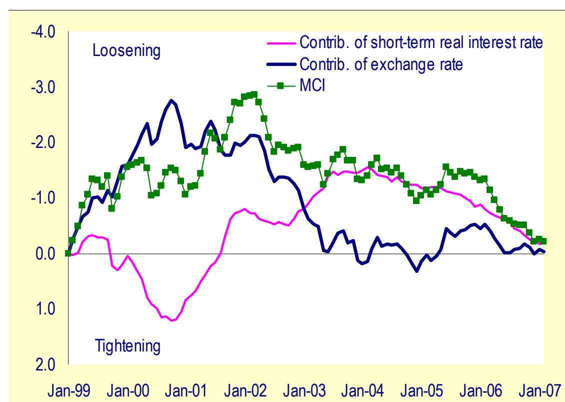
Graph 7: **ECB minimum bid rate and 3-month EURIBOR** (in % – 4 Jan 99 to 22 Mar 07)



Source: Commission services.

Although interest rates are still at relatively low levels, the policy rate hikes have led to some further tightening of monetary conditions in the euro area as measured by a Monetary Conditions Index (MCI).

Graph 8: **Euro-area MCI and its contributors** (Index Jan 1999=100 – Inverted scale – Jan 99 to Feb 07)

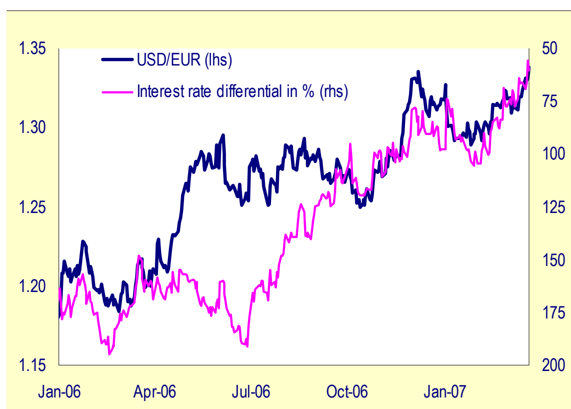


Source: Commission services.

Since the beginning of the year, the dollar-euro exchange rate has for most of the time fluctuated around USD/EUR 1.30. After the G7 meeting in Essen in mid-February, the euro staged a mini-rally, bringing the bilateral rate slightly above USD/EUR 1.31. The euro reached an all-time high against the yen on 22 February when it stood at JPY/EUR 159.5. In the wake of the stock market turbulences, the yen (temporarily) reversed some of its losses. While the bilateral dollar-euro exchange rate remained relatively stable during the stock market turbulences, the euro continued its rally against the US and climbed above USD/EUR 1.33 (see also Box 1).

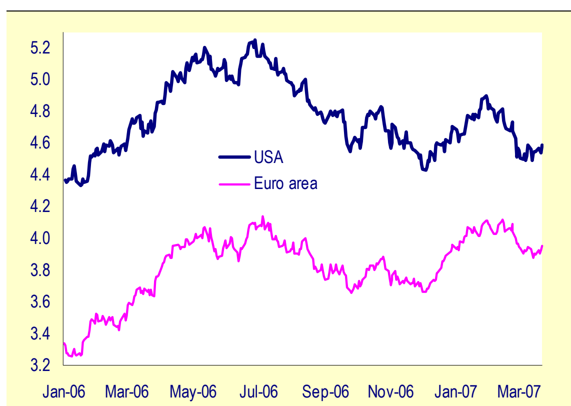
In general, foreign exchange movements are still mainly determined by (expected) interest rate developments and hardly by concerns about global imbalances. The good data for GDP growth in the fourth quarter of 2006 in the euro area and an improved outlook for 2007 in conjunction with market expectations of further interest rate hikes in the euro area supported the euro. In addition, lower-than-expected economic data weakened the US dollar.

Graph 9: **USD/EUR exchange rates and interest rate differential** (1 Jan 06 to 22 Mar 07)



Source: Commission services.

Graph 10: **10-year government bond yields** (in % – 2 Jan 06 to 22 Mar 07)



Source: Commission services.

The opposing news in the euro area and the US since February resulted in a narrowing of (expected) interest rate differentials across the whole maturity spectrum. As regards long-term interest rates, 10-year-government-bond yields in the US have declined by around 30 basis points since early February, while they only lost 20 basis points in the euro area. As a consequence, the interest rate differential narrowed to around 60 basis points, the lowest level since early 2005. The downward trend of government bond yields was intensified in recent weeks in the wake of the financial market turmoil (see box 1).

2. Is the yield curve still predicting recessions?

Tightening monetary policy and declining long-term interest rates have recently drawn attention to the empirical relationship between the yield curve and economic growth, in particular recessions. This discussion started in the US, where the Fed raised the federal funds rate in 17 consecutive meetings from June 2004 to July 2006, taking it from 1% to its current level of 5.25%. At the same time, long-term interest rates declined during most of 2004 and 2005, leading to an inverted yield curve. With some delay, the phenomenon of a flattening yield curve also emerged in the euro area where the ECB has progressively increased interest rates since December 2005 from 2% to 3.75% in March 2007. Falling long-term interest rates in most of the second half of 2006 also contributed to the flattening of the yield curve.

Historically, pronounced yield curve inversions in the US and the euro area have tended to be followed by recessions about a year later. Since the yield curve has typically outperformed other recession indicators, it is an important variable to monitor.

This section begins with a conceptual discussion of the yield curve and its relationship to real economic activity. It then reviews the predictive power of the US and euro-area yield curve and discusses what the present shape of the yield curve might tell us.

Theoretical explanations for the relationship between the yield curve and growth

The yield curve is the difference between long and short-term interest rates. In the following analysis, the yield curve is always defined as the difference between 10-year-government-bond yields and three-month treasury bills. The yield curve normally has a positive slope with long-term interest rates higher than short-term rates. This relationship reflects increasing risk premia as both inflation and the future health of the borrower become more uncertain as the time span extends. The gap between long and short-term interest rates, however, fluctuates considerably over time, and at times becomes negative. Empirical research has shown that an inverted yield curve has preceded all recessions but one in the US since 1960.

The literature on the yield curve's ability to predict recessions has been predominantly empirical, documenting correlations rather than building theories to explain such correlations. This focus on empirics may have created the unfortunate impression that there is no good explanation for the relationship. In fact, there is no shortage of reasonable explanations, many of which date back to the early literature on this topic and have now been extended in various directions. The literature presents two main explanations related to (i) monetary policy and; (ii) inter-temporal consumer choices.[4] These explanations are to a large extent compatible and, viewed in their totality, suggest a robust relationship between the yield curve and recessions.

Monetary policy influences the slope of the yield curve. A tightening of monetary policy means a rise in short-term interest rates, typically intended to lead to a reduction in inflationary pressures. Whereas short-term interest rates are relatively high as a result of the tightening, long-term interest rates reflect long-term inflation expectations and real interest rates. A rise in short-term interest rates induced by monetary policy could be expected to lead to a future slowdown in real economic activity and demand for credit, putting downward pressure on future real interest rates, while slowing activity may also result in lower expected inflation.

Another reason for an inverted yield curve before a recession is based on *inter-temporal consumer choices*.[5] A central assumption is that

[4] See for example Estrella, A. (2005), 'The Yield Curve as a Leading Indicator: Frequently Asked Questions', Federal Reserve Bank of New York, capital markets web page. Moneta, F. (2003), 'Does the yield spread predict recessions in the euro area?' ECB Working Paper No. 294, December 2003. Estrella, A, A. Rodrigues and S. Schich (2000), 'How stable is the predictive power of the yield curve? Evidence from Germany and the United States', *Review of Economics and Statistics*, Vol. 85, No. 3, August 2003.

[5] See Harvey, C. (1988), 'The real term structure and consumption growth', *Journal of Financial Economics*, Vol. 22. Hu, Z. (1993), 'The yield curve and real activity', IMF Staff Paper No. 40.